

Amendment and Response
Applicants: Nicola Ghelli et al.
Serial No.: 10/804,929

Attorney Docket: DID1039USD1

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Amendment to the Claims:

1. (Currently Amended) A device for oxygenating, filtering and controlling the temperature of blood in an extracorporeal circuit comprising a monolithic housing defining first, second and third interior chambers, the first chamber having a substantially cylindrical shape defining a central ~~position~~ portion and containing a plurality of microporous hollow fibers and having a blood inlet and a blood outlet connected to the first chamber to define a blood flow path along an exterior of the hollow fibers and having a gas inlet and a gas outlet connected to the first chamber to define a gas flow path through the lumens of the hollow fibers, the second chamber being positioned substantially within the central portion of the first chamber and containing a heat exchange surface and having a blood inlet and a blood outlet connected to the second chamber to define a blood flow path through the second chamber adjacent the heat exchange surface, the blood outlet of the second chamber being connected to the blood inlet of the first chamber, the third chamber containing a filtration membrane and having a blood inlet and a blood outlet connected to the third chamber to define a blood flow path through the filtration membrane, the blood inlet of the third chamber being connected to receive blood from the blood outlet of the first chamber.

2. (Canceled).

3. (Currently Amended) An integrated device for use in an extracorporeal blood circuit, comprising:

a housing defining a first portion and a second portion, the second portion being substantially ring-shaped and having an inner wall defining a substantially

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cylindrical opening, the first portion being positioned substantially within the cylindrical opening;

means for oxygenating blood contained within the first portion of the housing, the oxygenating means including a blood inlet and a blood outlet; and

means for filtering oxygenated blood contained within the second portion, the filtering means having a blood inlet connected to receive blood from the blood outlet of the oxygenating means, and a blood outlet, and a blood distribution chamber having a first cross-sectional area at the blood inlet and a second cross-sectional area at a location radially spaced from the blood inlet, the first cross-sectional area being greater than the second cross-sectional area.

4. (Currently Amended) A monolithic device for use in an extracorporeal blood circuit, comprising a housing having a blood oxygenator portion, a heat exchanger portion and an arterial blood filter portion, the blood oxygenator portion having a substantially cylindrical shape defining a central opening and containing a gas exchange membrane and having a blood inlet and a blood outlet defining a blood flow path along a first side of the gas exchange membrane and having a gas inlet and a gas outlet for defining a gas flow path along a second side of the gas exchange membrane, the arterial blood filter portion containing a filtration membrane and having a blood inlet and a blood outlet defining a blood flow path through the filtration membrane, the blood inlet of the arterial blood filter portion being connected to receive blood from the blood outlet of the blood oxygenator portion, the heat exchanger portion being contained substantially within the central opening of the oxygenator portion and having a blood inlet and a blood outlet connected to define a blood flow path through the

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heat exchanger portion, the blood outlet of the heat exchanger portion being connected to the blood inlet of the oxygenator portion.

5. (Canceled).

6. (New) The device of claim 1 wherein the blood inlet connected to the third chamber is positioned above the blood outlet connected to the third chamber to define the blood flow path through the filtration membrane from a top of the third chamber to a bottom of the third chamber.

7. (New) The device of claim 4 wherein the blood inlet and the blood outlet of the heat exchanger are connected to define an upward blood flow path through the heat exchanger portion.